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ABSTRACT

Noting the lack of research comparing the Test of Nonverbal Intelligence (TONI) with other measures of intelligence, a study was conducted to ascertain concurrent validity. The TONI was compared to the Slosson Intelligence Test for Children and Adults (SIT) and the Wechsler Intelligence Scale for Children--Revised (WISC-R). Subjects, 43 males and 28 females ranging from 7 to 18 years of age, completed the TONI and either the SIT or the WISC-R. The resulting data were analyzed with both Pearson product-moment correlations and t-tests. It was found that the TONI has statistically significant high correlations with both the SIT and the WISC-R. The results indicated that the TONI is an appropriate instrument to use when a language free intelligence test is needed. (Author/HTH)

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TONI: A LANGUAGE FREE SUBSTITUTE FOR THE SIT OR WISC-R?

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ABSTRACT

When a review of the literature failed to produce any studies comparing the Test of Nonverbal Intelligence (TONI) with other measures of intelligence, the authors decided to conduct a study to ascertain concurrent validity. The TONI was compared to the Slosson Intelligence Test for Children and Adults (SIT) and the Wechsler Intelligence Scale for Children - Revised (WISC-R). Seventy-one subjects were included in the study. There were 43 males and 28 females ranging from 7 to 18 years of age. Of the 71 subjects, 52 were white and 19 were black. Each was given the TONI and either the SIT or the WISC-R. The data gathered was analyzed with both Pearson product-moment correlations and t-tests. It was found that the TONI has statistically significant high correlations with both the SIT and the WISC-R. The results indicated that the TONI is an appropriate instrument to use when a language free intelligence test is needed.

TONI: A LANGUAGE FREE SUBSTITUTE FOR THE SIT OR WISC-R?

The Test of Nonverbal Intelligence (TONI) by Brown, Sherbenou, and Dollar (1982), is a relatively new measure that can be used with individuals that have some form of language dysfunction. A search of the literature for comparative studies involving the TONI with other accepted intelligence measures yielded no results. Therefore, it was decided to investigate the concurrent validity of the TONI with both the Slosson Intelligence Test for Children and Adults (Slosson, 1983) and Wechsler Intelligence Scale for Children - Revised (Wechsler, 1974).

METHOD

Subjects

Seventy-one subjects were included in the study. The randomly selected subjects, with no known learning disabilities, were enrolled in various local public schools. Of the 71 subjects given the TONI, 50 were also administered the Slosson Intelligence Test for Children and Adults (SIT) while the remaining 22 were administered the Wechsler Intelligence Scale for Children - Revised (WISC-R). There were 43 males and 28 females tested. Sixty-seven of the subjects

included were white and 23 were black.

Procedure

The SIT and the WISC-R, two measures of intelligence chosen as a basis for comparison with the TONI, were selected because of their comprehensive use in local schools, reading clinics, and their acceptability in many research projects as reported in the literature. Twice as many subjects were given the SIT as the WISC-R. This ratio occurred because many of the subjects were not available for the length of time needed to administer the WISC-R. Trained clinicians administered the tests in alternating fashion in an attempt to counter balance any fatigue or practice effect.

The statistical procedures used in data analyses included Pearsons product-moment correlations and t-tests.

RESULTS

The data collected in comparing the TONI with the SIT and WISC-R were analyzed with Pearson product-moment correlations. Statistically significant high correlations were found when the TONI was compared with the SIT and WISC-R. The results are presented in Table 1.

Table 1

PRODUCT-MOMENT CORRELATIONS BETWEEN INTELLIGENCE TESTS

	SIT	WISC-R
TONI	.71*	.72*

*p. > .001

Further analyses on the data gathered for the 21 subjects who were administered the WISC-R was conducted. The scores from the verbal and performance tests of the WISC-R were analyzed with a t-test. No statistically significant differences were observed. The mean score for the verbal test was 99.52, the mean score for the performance test was 106.00, with 18 degrees of freedom, and a T value of -1.86. The TONI scores and corresponding WISC-R verbal and performance scores were then analyzed using Pearson product-moment correlations. The TONI scores were found to have statistically significant correlations with both scores of the WISC-R. However, a slight discrepancy between verbal and performance scores was noted with the verbal correlating only moderately and performance correlating highly with the TONI. The results are presented in

Table 2.

Table 2

PRODUCT-MOMENT CORRELATIONS BETWEEN THE TONI AND THE VERBAL AND PERFORMANCE SCORES OF THE WISC-R

	WISC-R	
	Verbal	Performance
TONI	.61*	.77*

*p. > .01

**p. > .001

In addition all data collected for the TONI were analyzed with t-tests to determine if any racial or sexual biasing was present. No statistically significant differences were found in either case. The results are presented in Table 3.

Table 3

T-TEST FOR TONI SCORES BY SEX AND RACE

	Means	Sd	t
Male	99.1	11.6	.16
Female	98.6	11.0	
White	100.3	12.5	1.36
Black	95.6	6.9	

DISCUSSION

The statistically significant high correlations gathered when the TONI was compared to both the WISC-R and the SIT, led the authors to conclude that the TONI can be considered an acceptable instrument to use when measuring intelligence. Furthermore, when the TONI was compared to the verbal and performance scores of the WISC-R, high correlations were found between the TONI scores and the WISC-R performance scores. Moderate correlations were found between the TONI and the WISC-R verbal scores. Thus, the TONI appears more strongly related to a language free or a composite measure of intelligence than to verbal ability. Since a language deficit could tend to deflate a measure of overall general intelligence, one would presume lower correlations between the TONI and other intelligence measures requiring language. Therefore, if the subjects included in a study had language deficiencies, moderate to high correlations would not be acceptable between the TONI and any other measure of intelligence which rely on oral language.

Additional analyses of the data for the TONI revealed that the mean scores between sex and between race were not significantly different. However, the

authors recognize that because of the small sample only narrowly based conclusions can be drawn regarding sex and race.

Further research is needed to provide additional information as to the test's validity. One such study needs to include subjects with known language deficits in order to determine if the use of a language free intelligence measure will yield different results from an intelligence measure that requires the use of language both in the administration and the responses of the subjects.

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